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| APPLICATION NO.           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|------------------------------|------------------|
| 10/633,681                | 08/05/2003  | Keiichi Yoshioka     | R2184.0247/P247              | 6878             |
| 24998                     | 7590        | 12/31/2007           | EXAMINER                     |                  |
| DICKSTEIN SHAPIRO LLP     |             |                      | WOJCIECHOWICZ, EDWARD JOSEPH |                  |
| 1825 EYE STREET NW        |             |                      | ART UNIT                     | PAPER NUMBER     |
| Washington, DC 20006-5403 |             |                      | 2815                         |                  |
| MAIL DATE                 |             | DELIVERY MODE        |                              |                  |
| 12/31/2007                |             | PAPER                |                              |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/633,681             | YOSHIOKA, KEIICHI   |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Edward Wojciechowicz   | 2815                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 03 December 2007.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-5,8-13 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-5 and 8-13 is/are allowed.
- 6) Claim(s) 18-22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The structure of the invention is not clearly defined in claim 18. Specifically, the structure, composition and precise location of the "element separation films" is unclear. How do these separation films enclose each source and drain region? Are the source/drain regions completely surrounded by the separation films? Are the separation films distinct from the semiconductor region in which the inverter cells are formed? Are these separation films conductive or insulative films?

The structure recited in claim 19 is not clearly defined with respect to how the "another" heat conduction part is coupled to the gate through another element.

The structure recited in claim 22 is not clearly defined with respect to the structure of the "field cell" and exactly how the field cell comprises a heat conduction part. Is the structure of the "field cell" the same as that of the "heat conduction part"?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-22 are further rejected, insofar as understood, under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (6,919,235) in view of Shimada and Yamazaki (2005/0023579). The

discussion of Yamazaki '235 and Shimada is hereby incorporated by reference from the previous actions. Yamazaki (2005/0023579) is cited to provide a more explicit teaching of the use of the claimed heat conduction structures in inverter circuits.

Specifically, Yamazaki shows, for example in FIGS. 7-10, the formation of multilevel heat conduction parts comprised of metal wiring layers and metal via layers which contact various portions of inverter cells, as claimed. Combined with the known structure taught by Yamazaki '235 and Shimada, these references appear to teach all of the claimed features, insofar as they are understood. One skilled in the art would also realize the such heat conduction structures would have utility at various parts of the active device, including gates and surrounding areas so as to improve device performance.

***Allowable Subject Matter***

Claims 1-5 and 8-13 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Wojciechowicz whose telephone number is 571-272-1739. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edward Wojciechowicz  
Primary Examiner  
Art Unit 2815

EW: ew